

APPLICANT(S): GINZBURG, Boris et al.  
SERIAL NO.: 10/734,120  
FILED: December 15, 2003  
Page 2

### REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

### Status of Claims

Claims 1-40 remain pending in the application. Claims 1-40 have been rejected.

### CLAIM REJECTIONS

#### 35 U.S.C. § 103 REJECTIONS

##### 35 U.S.C. § 103 Rejection based on Hammons in view of Barlev

In the Office Action, the Examiner rejected claims 1-6, 10-16, 18-25, 28-32, 34-37 and 39-40 under 35 U.S.C. § 103(a), as being unpatentable over Hammons, JR. et al. (US 2002/0165626, hereinafter "Hammons") in view of Barlev et al. (US 7,133,441, hereinafter "Barlev").

Applicants respectfully traverse the rejections of claims 1-6, 10-16, 18-25, 28-32, 34-37 and 39-40 under 35 U.S.C. § 103(a), because a prima facie case of obviousness has not been established.

An obviousness rejection requires a teaching or a suggestion by the relied upon prior art of all the elements of a claim (M.P.E.P. §2142). Without conceding the appropriateness of the Examiner's combination, Applicants respectfully submit that the combination of Hammons and Barlev does not meet the requirements of an obviousness rejection, in that the combination fails to teach or suggest all the elements of the claimed invention.

As indicated in the office action, Hammons does not disclose "a controller to select either said frequency-multiplexing modem or said spatial-multiplexing modem to modulate a signal based on a predetermined criterion", as recited by claim 1. Further, Barlev does not

APPLICANT(S): GINZBURG, Boris et al.

SERIAL NO.: 10/734,120

FILED: December 15, 2003

Page 3

teach or suggest "a controller to select either said frequency-multiplexing modem or said spatial- multiplexing modem to modulate a signal based on a predetermined criterion".

Contrary to the office action's contention, Barlev merely discloses TDM or FDM techniques as 2 different and separate embodiments. For example, Column 15, lines 33-39 of Barlev reads as follows:

"The HSAS unit comprises several blocks and may be implemented in numerous ways. Several exemplary embodiments are provided, one illustrates the HSAS unit in a Time Division Multiplexing (TDM) mode and another illustrates the HSAS unit in a Frequency Division Multiplexing (FDM) mode. "

Fig. 5 of Barlev and its description starting at column 15, line 40 with the subtitle "HSAS: TDM embodiments" are directed to a system constructed to integrate conventional telephony using Time Division Multiplexing (TDM) and Fig. 6 of Barlev and its description starting at column 18, line 55 with the sub title "HSAS: FDM embodiments" are directed to a system constructed to integrate conventional telephony using Frequency Division Multiplexing (FDM) mode.

Accordingly, without conceding the appropriateness of the Examiner's combination, Applicants respectfully assert that neither Hammons nor Barlev, alone or in combination, teaches or suggests, at least a frequency-multiplexing modem implementing a frequency-multiplexing modulation method; a spatial-multiplexing modem implementing a spatial-multiplexing modulation method; and a controller to select said frequency-multiplexing modem or said spatial-multiplexing modem, as recited by claims 1, 13 and 20.

Likewise, neither Hammons nor Barlev, alone or in combination, teaches or suggests, at least selecting by a controller to modulate a data frame of a signal using either a frequency-multiplexing modulation method, implemented by a frequency-multiplexing modem, or a spatial-multiplexing modulation method, implemented by a frequency-multiplexing modem, based on a predetermined criterion as recited by claims 28 and 34.

Further, Barlev and Hammons are not related to similar fields as Barlev is directed to transporting data streams over unshielded twisted copper pairs and Hammons is directed to

APPLICANT(S): GINZBURG, Boris et al.

SERIAL NO.: 10/734,120

FILED: December 15, 2003

Page 4

wireless communication. Accordingly, Applicant respectfully asserts that the combination of Hammons and Barlev is improper.

In view of the above, applicants respectfully submit that claims 1, 13, 20, 28 and 34 are allowable. Claims 2-6, 10-12, 14-16, 18-19, 21-25, 29-32, 35-37 and 39-40 depend directly or indirectly from one of claims 1, 13, 20, 28 and 34 and thereby include all the limitations of their parent claim as well as additional distinguishing elements. Therefore, claims 2-6, 10-12, 14-16, 18-19, 21-25, 29-32, 35-37 and 39-40 are patentable for at least the reasons discussed above with regard to claim 1, 13, 20, 28 and 34. In view of the above remarks, Applicants respectfully request that the above rejections of claims 1, 3, 4, 11 - 13, 15 and 16 under 35 U.S.C. § 103(a) be withdrawn.

#### **35 U.S.C. § 103 Rejection based on Hammons, Barlev and Emilsson**

In the Office Action, the Examiner rejected claims 7-9, 17, 26-27, 33 and 38 under 35 U.S.C. §103(a) as being unpatentable over Hammons and Barlev in view of Emilsson et al. (US 6,498,788, hereinafter "Emilsson").

As discussed above, amended independent claims 1, 13, 20, 28 and 34 are patentable over Hammons and Barlev. Emilsson does not cure the deficiencies of Hammons and Barlev. Accordingly, claims 1, 13, 20, 28 and 34 are allowable over the combination of Hammons, Barlev and Emilsson. Each of dependent claims 7-9, 17, 26-27, 33 and 38 depends, directly or indirectly, from one of independent claims 1, 13, 20, 28 and 34, and includes all the features of the claim from which it depends as well as additional distinguishing features, and is therefore allowable.

In view of the above, Applicants respectfully request that the rejections under 35 U.S.C. §103(a) of dependent claims 7-9, 17, 26-27, 33 and 38 be withdrawn.

#### **CONCLUSION**

In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Response, the Examiner is requested to contact the undersigned at the telephone

APPLICANT(S): GINZBURG, Boris et al.

SERIAL NO.: 10/734,120

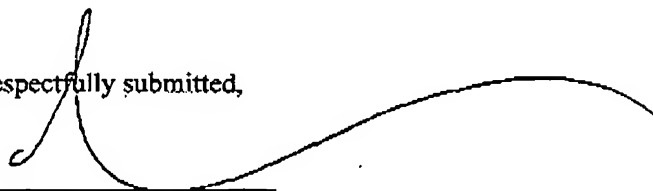
FILED: December 15, 2003

Page 5

number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Aside from the fee for the RCE, being requested separately, no fees are believed to be due associated with this paper. However, if any such fees are due, please charge such fees to deposit account No. 50-3355.

Respectfully submitted,



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